



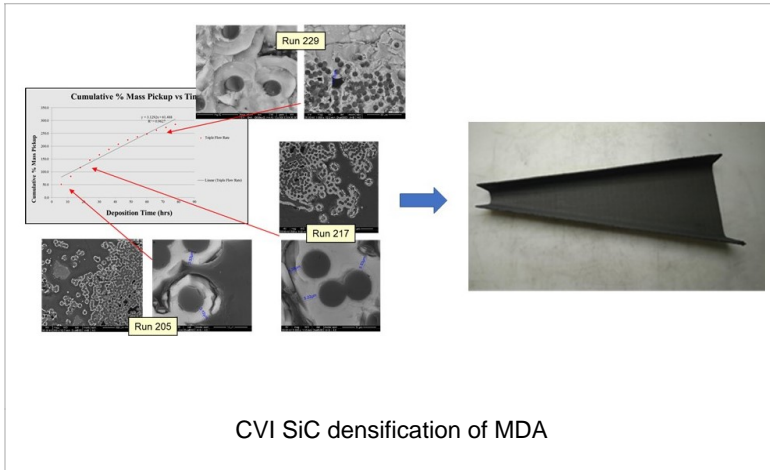
Novel 3D C-SiC Composites for Hot Structures

Allcomp, Inc.

PI: Steve Jones, Proposal#: H5.04-8716

OBJECTIVES

1. Optimize Allcomp's CVI SiC densification process on both 2D and 2.5D Needled Preforms.
2. Upgrade and Automate Allcomp's CVI SiC reactor
3. Densify multiple 2D and 2.5D panels using CVI SiC and develop material properties database
4. Develop multiple hybrid densification processes to develop comparable material properties while decreasing fabrication time and cost.
5. Demonstrate these fabrication processes on a relevant Manufacturing Demonstration Article



ACCOMPLISHMENTS

NOTABLE DELIVERABLES PROVIDED

During this Phase II program, a material database for both 2D and 2.5D was generated. In addition, complex shaped demonstration articles were fabricated and delivered for possible future testing.

KEY MILESTONES MET

All milestones planned in this program were achieved. These included: 1) developing a densification methodology using CVI SiC and hybrid processing methods for both 2D and 2.5D composites. 2) a material property database was developed for both 2D and 2.5D material, demonstrating comparable properties to previous SOA materials. 3) Complex shaped Manufacturing Demonstration Articles were fabricated using these different manufacturing processes.

FUTURE PLANNED DEVELOPMENTS

PLANNED POST-PHASE II PARTNERS

Allcomp is working with several companies using their CVI SiC technology. One of these companies, an aircraft engine manufacturer, is interested to expand the technology into SiC- SiC composite fabrication.

PLANNED/POSSIBLE MISSION INFUSION

There are several potential NASA applications that would benefit from C/SiC composite technology, including Human Exploration and Aeronautics/Hypersonics

PLANNED/POSSIBLE COMMERCIALIZATION

Allcomp is working with several companies to bring this technology into the semiconductor industry, namely in the LED, MoCVD, and Epitaxy markets.

CONTRACT (CENTER)	NNX15CL23C (LaRC)	SOLICITATION-PHASE	SBIR 2014-II
SUBTOPIC	H5.04 Hot Structures	TA	12.1.1 Lightweight Structure

TRL	1	2	3	4	5	6	7	8	9
			IN	OUT					